

THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII

NOVEMBER, 1939

NUMBER 11

OBSTRUCTIVE UROPATHY

ALEXANDER RANDALL, M.D.

1323 MEDICAL ARTS BUILDING, PHILADELPHIA, PA.

Prior to 1925 Urology thought in terms of single-organ pathology and single-organ therapy. We were advancing hurriedly through an era of rapid exploitation of marvelous diagnostic methods and therapeutic measures. The new physiology of renal function, the rapid strides in blood chemistry determinations, the refinements in pyelography, the improved roentgenology and better interpretation, the unending instrumental developments, and the broadening of the entire field of urologic surgery had been almost breath-taking in the prior two decades. But we still thought in terms of single-organ pathology, and gave but scant attention to related functioning organs. Perhaps one reason for this was the tremendous reserve power to be found through the entire urinary apparatus. Our surgery progressed because this reserve played with us rather than against us. Think of the trabeculated wreck of a bladder wall back of an obstructing prostate. There is little wonder that this gross picture absorbed the minds of the French School, who sought therein to find the cause of the urinary retention. But let us marvel even more how such a tortured organ can come back to happy function again after prostatectomy. Think of the dilatation of the upper urinary tract that frequently occurs during the last months of a pregnancy, and the postpartum return to normal. We have very slowly learned to appreciate this wonderful reserve power, and now know we must never lose sight of it in our preoperative planning and in our postoperative prognosis.

In 1926 the term "Obstructive Uropathy" first appeared in print. Let me quote its definition: "Under this heading are grouped all the changes in the kidney, pelvis, ureter, bladder and urethra resulting from obstruction to the free outflow of urine from the urinary tract." (*Young*) But let us go a little deeper into this definition. It states "all the changes in the kidney, pelvis, ureter, bladder and urethra," again focusing attention upon organ pathology, with, of course, a surgeon's hope to rectify or extirpate.

In 1930 a new era was ushered in by the development of intravenous urogram. I wish to accentuate this term in the hope that it will be more generally adopted. A pyelogram is a picture of a renal pelvis, and by the same token a urogram should be the term by which we mean a picture of the entire system by which urine is transported. And here let us examine the changes that have transpired since this new method of study has been available.

First and foremost, let it be understood that the method depicts urine transportation. Other features of value are present, but for the first time we are now able to visualize the physiological transportation of urine. Note, if you will, the immediate change in perspective, for we leave the attitude of considering the pathologic changes in the organs involved, which result from obstruction, and focus our attention on the dynamics of urinary transportation, which naturally initiate the train of events that follow such a disturbed physiological function.

Let me digress a moment here to raise a point in criticism of a common error in technique. Why insult such a test, let alone a pair of kidneys, by such an artifact as a compression bag? Why create an artificial obstructive uropathy to disturb a brilliant picture-story of renal physiology and urine transportation? Change your patient's position at will, but don't introduce foreign artificialities.

Secondly, urography has forced the urologists to stop thinking in terms of organ pathology and has caused them to read their problems in terms of a system involvement and a system reserve, to think in terms of the whole urinary tract, to analyze the entire physiological disturbance, and to plan corrective surgery from an evaluation of the entire system of urine transportation. Think of this concept and what it means by realizing what has become of the frequency of that passing fad, the ureteral stricture—"gone with the wind" that blew it into our clinics, because now we visualize undisturbed urine transportation.

Professor of Urology, University of Pennsylvania Medical School.

Read at Interne Alumni Clinic Day, at the Memorial Hospital, Pawtucket, R. I., on November 2, 1938.

In dealing with this large subject of Obstructive Uropathy, let me spare you by limiting my remarks to the upper urinary tract only. We know quite well the problems connected with stricture of the urethra, and with the obstructive prostate in its pathological manifestations. We know that from these infravesical obstructions we observe marked functional disturbances in the upper urinary tract and in renal secretory work. If there is not too much disturbance to countermand surgery, the comeback of renal function is often as spectacular as the competence of the postprostatectomy bladder function.

But when the obstruction is supravescical, the anatomic changes in the kidney are then outstanding. It is here sometimes that we see the so-called silent renal pathology develop, all because a compensating mate takes over the essential kidney work by reason of its high reserve power. In these unilateral cases, with the absence of a protective musculature like the bladder to cushion the insult from the pressure caused by an obstruction, the damage seems more rapid and more destructive of renal tissue.

By restricting our study to those clinical cases where the obstructive uropathy is supravescical, we also, by the same token, restrict our subject almost exclusively to ureteral pathology. The physiology of the ureter is not yet thoroughly understood, but the consensus of opinion is that its blood supply, its lymph drainage and probably its neurogenic control are segmental. In this way its function can be properly compared to the intestine, particularly as its essential function is manifest in a periodic peristaltic wave of contracture for the expulsion of its contents, the urine.

Likewise, our subject has to deal solely with an interference in this simple function, the mechanism of the proper transportation of urine. As is usual, the simpler conditions were recognized first. They gave the gross pictures and changes on intravenous urography, which were quickly checked and repeatedly proven at the operating table; and we can dismiss, as being well understood, appreciated and recognized, the role of ureteral calculus, of accidental ureteral ligation, of tuberculosis, of pregnancy, of ptosis, and the great catalogue of congenital anomalies. This is setting aside that group based on primary lesions, wherein there occurs a ureteral failure of function, and with it the results of an obstructive uropathy is secondarily drawn into the clinical complex.

But there is another way in which to look upon ureteral dysfunction, and that is to study it from a physiological point of view and to try to estimate the functional derangement, its clinical recognition and its surgical correction. These are the finer and more elusive clinical problems that we are now trying to recognize in their incipency and before gross anatomic renal damage occurs, when any one can recognize the ultimate hydronephrotic atrophy, and any surgeon can sacrifice the kidney.

There seem to be two groups that for the moment may be stated and later combined: Those that hamper and reduce renal function, with symptoms, and secondly, those that hamper and reduce renal function, without symptoms. The former go unrecognized through failure of proper interpretation. The latter, unfortunately, fall prey to the inherent sloth of human indifference, which in the physician is evidenced by a faith in pills and prescriptions instead of a bit more time and a physical examination of the abdomen.

We have been guilty of talking of silent renal pathology: is it ever truly silent, or only relatively so? It has been well said, that what is called silent pathology by one medical generation may well be considered clear diagnostic evidence by the next. Advance in diagnosis always proceeds in this fashion. As more and more is known, we learn to include less definite and more distant symptoms in what we like to term the "classical picture" of a disease. (*Pepper*) No, renal pathology is never truly silent; it is only ignorance that makes us deaf to its outcry.

Briefly, let us examine the symptom of pain, as it is frequently the only complaint of the patient.

There are few symptoms in medicine more classical in the consistency of its characteristics or more characteristic in its consistency than an attack of sudden ureteral blockage, such as by stone, so graphically described by Dietl and ever since called a Dietl's crisis. Perhaps it is unfortunate that this picture is so clear in the mind of every practitioner, for I am sure this syndrome has been borne in upon physicians so acutely that some are prone to look upon it as pathognomonic of upper urinary tract pathology or, in its absence, to omit to look further.

In man the sensory nerve distribution from the renal plexus is composed principally of branches from the celiac ganglion which, in turn, receives connections from the vagus and splanchnic nerves and also from the superior mesenteric ganglion

and aortic plexus. Jost was able to demonstrate in the rabbit a definite connection between the abdominal sympathetics and the renal plexus, and this connection was clearly shown in man by the careful anatomic dissections of Hirt. In addition, the splanchnic minor always sends a direct branch to the kidney—the postrenal nerve of Henle. Therefore, it is clear that through the sympathetic system the upper urinary tract enjoys direct nervous contiguity with the nerve centers controlling the gastro-intestinal tract. Such is the interesting and diversified positive field. But there is, as usual, another or negative field, for the renal parenchyma itself contains no sensory nerves, and at operation under local anesthesia the substance of the kidney can be incised without causing pain. Here is the crux of the matter, for lesions involving the parenchyma of the kidney alone cause no pain whatsoever, and only when parenchymal swelling causes capsular tension, or when parenchymal infection spreads to the capsule or the pelvis, can true renal pain arise.

Pain can arise from the pelvis or the ureter only because of irritation of sensory nerves when the pelvis is inflamed or suddenly distended. If pelvic distention is slow, or if inflammation is not sufficiently irritating, there may be no pain, and it is in these gradually acquired pathologic states that there seems to be a decided tendency for sensory symptoms to be referred to a gastro-intestinal distribution, and naturally be given a gastro-intestinal interpretation.

Therefore, in evaluating the symptom of pain in renal disease, bear in mind the following possibilities: First, that pelvic distention by sudden ureteral occlusion causes severe pelvic pain—that sharp, lancinating, intermittent colic, with its characteristic reference along the course of the iliohypogastric and ilio-inguinal nerves, so typically seen in the passage of a calculus. Second, that capsular and pelvic disease, as seen in the subacute infections, causes true kidney pain—a localized, dull, constant loin ache, which is always better after a night's rest. Third, that parenchymal lesions are frequently utterly painless; and here belong the early tumors and parenchymal tuberculosis. Fourth, that the gradually developing pelvic distentions—the hydronephroses, the floating kidneys, the dysplastic and anomalous kidneys and those obstructive uropathies secondary to adnexal lesions—are prone to produce a maximum of symptoms referable to the gastro-intestinal system.

It is to this last group that we need to devote our attention today. They are in every clinic in every hospital—the “dyspeptic” of the medical clinic; the “neurasthenic” of the neurological clinic; the gynecologist sees them and administers a tampon; the surgeon gazes despairingly at the multi-scarred abdomen and searches again for “adhesions.” I speak sincerely and advisedly, for I have had the privilege of working for the past eight years in a hospital where every chronic abdominal complaint lacking an accurate diagnosis is given the advantage of an intravenous urographic study and a urologic consultation. It will serve no purpose to list cases, but our opportunity to study this group, and our ability, by investigative measures, to reproduce at will renal, ureteral and vesical pain have enabled us to estimate correctly the fundamental cause of complaint in innumerable cases.

The next major symptom too often misused is the urinalysis. Omitting on purpose those evidences of bilateral disease, let me accentuate only briefly the microscopic observation of R.B.C.'s and W.B.C.'s. Hematuria should never be left uninvestigated. We have a teaching slogan that the word hematuria spells cystoscopy. When picked up on a routine examination, it is an unerring evidence of active pathology which should be traced to its source without loss of time. The finding of pus cells in the urine, on the other hand, though of less lethal significance, equally demands an explanation; but let me aid you by suggesting the immediate study of a catheterized specimen in man, woman or child: you will save yourself and others embarrassment in some cases.

Much could be written on the role of infection in obstructive uropathies, but two basic facts must be ever in mind. First, that infection always hastens the anatomic destruction of renal and ureteral function, and creates an additional hazard to surgery and a poorer prognosis for a return to normal. Secondly, that infection is, of itself, almost a proof of persistent obstruction, for the difficulty of experimentally infecting a normal urinary tract is well recognized, and the inability to disinfect is fair *prima facie* evidence of the lack of normal emptying.

The role of the drugs now available for use as urinary antiseptics is most promising and appealing, and without troubling you with specific details, let me point out a reason for inevitable failure in some cases. Though we be cognizant of the organ-

ism present, and familiar with the drug that is a known specific, there must always be present a third essential factor in combating a renal infection, and that is enough function in the involved kidney to excrete the drug in sufficient concentration to be therapeutically active. Failures that at times are attributed to the inefficiency of a drug, after glowing accounts and remarkable cures have raised expectations, are often due to the absence of the one prime essential to success—that sufficient renal function is present on the diseased side to eliminate the given antiseptic in efficient concentration. Here again a urographic study should give us an answer. One further point is worthy of your attention, because not only is it new, but it is entering a field of medicine that has heretofore seemed far removed from urology. There is a rapidly growing amount of evidence to show that certain cases of so-called essential hypertension are of renal origin. I will not burden you with the accumulating evidence except to cite that for years we have been aware of the hypertension associated with prostatic obstruction, and its marked and permanent decrease following prostatectomy. In addition, there stands out the work of Hinman on experimental hydro-nephrosis, wherein he showed that the renal atrophy was not a pressure atrophy, but an ischemic atrophy. There then follows the work of Goldblatt on renal artery ligation, to succeed in producing an artificial renal ischemia and experimental hypertension; and now finally there is appearing in the literature the citation of isolated cases, where marked unilateral renal disease has been found in cases of hypertension, and where nephrectomy has been followed by a most sensational fall to relatively normal blood pressure limits. What a fascinating and important field lies before us!

In conclusion, what import does this brief summary on obstructive uropathy carry? It carries a plea that intravenous urography has become a most important step in the investigation of a relatively large group of clinical cases. Its simplicity, its lack of danger or even discomfort and its relative cheapness are strongly contrasted to the marked benefits that may be derived therefrom. But let me voice this one word of warning—that such a study frequently requires the interpretation of one especially interested in the finer details of urologic pathology.

Let me summarize the points that I may be allowed to call important in this paper:

1. That intravenous methods for urologic diagnosis have changed our point of view from terminal pathology in organs to a physiological study of the urinary system and urine transportation.
2. That the physiological transportation of the urine is the basic essential factor to the early understanding of this problem.
3. That the slowly developed and chronic obstructions characteristically give gastrointestinal symptoms, and that every chronic abdominal complaint should receive the advantages of an intravenous urographic study.
4. That red blood cells in the urine demand an explanation.
5. That the treatment of unilateral kidney infections by drugs demands, besides recognition of the organism and choice of the specific drug, sufficient renal function for a therapeutic effect.
6. That we are approaching a realization that certain cases of hypertension have a unilateral renal etiology amenable to surgery.

Conclusions

Thus I have tried to demonstrate the relationship of cause and effect: the role of innocent mild urinary blockage as a fertile soil for developing serious trouble:

- (1) The factor that, as in the bladder, so in the kidney, stone is no longer a disease but only a symptom.
 - (2) Infection comes and tarries when the soil is prepared and attractive.
 - (3) That anomalies are present in a ratio of one to five; and
 - (4) That oftentimes we do not think urologically because of the apparent silence so characteristic of renal pathology.
1. The uncomplicated obstructive nephropathies present no laboratory or clinically recognizable sign or symptom that would distinguish them from simple chronic nephritis only detailed urologic and X-ray examinations will disclose the character of an obstructive lesion.
 2. Anatomical destructive changes are in direct ratio to the duration and degree of the obstruction—partly offset by personal reserve power.
 3. The extent of physiological recovery is in indirect proportion to the duration of the obstruction.
 4. Cure is absolutely dependent upon the establishment of free, competent and normal physiological drainage for the urine.
 5. Infection changes the picture and greatly accelerates the destructive features.
 6. Infection can be cured only when free drainage is accomplished.
 7. The greatest danger lies in the loss of time.
 8. One should never lose sight of the frequency of anomalies in the urinary tract, and the part they play in soil preparation.

BROMIDE INTOXICATION

PAUL WM. PREU, M.D.

333 CEDAR STREET, NEW HAVEN, CONNECTICUT

Bromide intoxication is a serious condition which occurs with regrettable frequency in spite of the fact that it is entirely preventable. Eighteen cases of severe intoxication have been encountered in 2,000 consecutive admissions to the psychiatric inpatient service of the New Haven Hospital, with two deaths. It is evident, therefore, that this condition is of considerable clinical importance, and that it needs continued emphasis in medical discussion and publication.

It was in 1927 that Wuth, of the psychiatric service of the Johns Hopkins Hospital, first called the attention of American physicians to bromide intoxication. Since that time series of cases have been reported from all parts of the United States, including a report from Southern New England in 1936. There is no evidence, however, that the incidence is decreasing. It would seem worthwhile, therefore, again to review the situation, and to emphasize the reasons why bromide intoxication occurs as well as to indicate the criteria for diagnosis and the effective method of treatment.

Bromide is one of the most popular sedative drugs and has been used extensively in the symptomatic treatment of nervous and mental illnesses. The bromide salts in various combinations are the active agents in numerous widely advertised proprietary preparations, some of which are marketed under misleading names with exaggerated claims for their therapeutic usefulness. The sale of bromide is unrestricted, a physician's prescription is not necessary. The pharmacologic action of bromide is poorly understood by many physicians. The danger of intoxication is not generally appreciated. Methods of diagnosis and treatment of intoxication have not been given sufficient emphasis in clinical teaching. The indications and contraindications for the therapeutic use of bromide are not clearly defined in textbooks of medicine.

The sedative action of bromide depends upon its depressing effect upon the central nervous system.

Assistant Professor of Psychiatry and Mental Hygiene in the Yale University School of Medicine and Physician-in-charge of the Psychiatric Clinic of the New Haven Hospital.

Read before the Rhode Island Society for Neurology and Psychiatry, Providence, April 10, 1939.

Undesirable side effects are uncommon but nausea and acneform skin eruptions sometimes are observed. Bromide is readily absorbed from the stomach when given by mouth and appears in the urine within a few minutes after ingestion. The elimination of the drug from the body proceeds slowly, however. Bromide tends to displace chloride in the blood and other body fluids, where it may accumulate to such an extent that a state of intoxication is produced. The chloride which is displaced is excreted by the kidneys in preference to bromide. The interchange of chloride and bromide apparently involves equilibrium reactions since the administration of large amounts of chloride accelerates the elimination of bromide. It follows that the danger of intoxication is diminished by a generous chloride intake and that it is exaggerated in states of malnutrition and dehydration in which the intake of fluids and chloride may be limited or the stores of these substances in the body depleted. Impairment of renal function in nephritic and arteriosclerotic conditions may also enhance the risk of intoxication.

If the accumulation of bromide in the blood continues, definite intoxication develops. The early symptoms of bromide intoxication are an exaggeration of the therapeutic sedative effect. Retardation of thought, speech and action appears, together with anorexia, constipation and drowsiness. This stage of intoxication seldom is dangerous if it is recognized; the symptoms clear up gradually when the administration of bromide is discontinued. If this is not done, however, and the drug continues to accumulate, outspoken mental disturbance, which may cause serious difficulty, frequently occurs. Drowsiness and lethargy may progress to stupor or may be replaced by insomnia and irritable restlessness. The patient refuses food and fluids and may become severely dehydrated. Dry mucous membranes, furred tongue, foul breath, dilated pupils, ataxia and tremulousness are typical. Delirious manifestations appear.

Clouding of consciousness is the basic disturbance in delirium. This is manifested symptomatically by disorientation for time, place or person, misidentification and misinterpretation of familiar people and situations, failure of comprehension, especially of familiar routine material, and disturbance of memory especially for recent events. The clouding characteristically fluctuates and is fre-

quently worse at night. The patient may be quite clear at one time and markedly confused a few hours later. Clouding is directly dependent upon crude organic disturbance of cerebral functioning. The patient usually responds with fear to his hazy, unfamiliar and therefore threatening environment which is poorly comprehended in a dreamlike way. Vivid, terrifying illusory and hallucinatory experiences often occur involving especially the visual perceptive sphere. The patient may respond with panic and paranoid projection. The body-image may become distorted so that the delirious patient is unclear even about himself. Vestibular disturbance is frequent, with dizziness and sensation of rhythmic movement often misinterpreted by the patient as indicating that he is on a boat or an airplane. The "boat-theme" occurs exceedingly frequently in delirium and is practically pathognomonic of that condition.

In some cases, for reasons which are not entirely understood, skin lesions occur. The eruption is usually pustular acneform in type, indistinguishable in appearance and distribution from acne vulgaris. The cutaneous eruption usually appears only after prolonged administration of bromide, thus differing from the exanthems of drug idiosyncrasy. Severe skin eruptions may occur in the absence of mental disturbance, while the skin may be normal in the presence of delirium or coma. This point demands emphasis because some physicians prefer to wait for the appearance of a skin eruption before making a diagnosis of bromide intoxication. Dependence upon the bromide eruption as a diagnostic aid is one of the chief reasons why delirium and coma with bromide intoxication pass unrecognized.

The existence of bromide intoxication is suggested, therefore, by mental or dermatologic symptoms which may be found alone or in combination.

The diagnosis of bromide intoxication presents certain difficulties. Most patients have been suffering from some nervous or mental illness which manifests its own symptoms, so that if a bromide delirium is superimposed, a very complicated psychiatric picture is produced. If the characteristic symptoms of delirium are recognized, the diagnosis can readily be made, for clouding of consciousness cannot be attributed to a preëxisting mild personality disturbance or so-called "functional psychosis." If the bromide was given to allay the symptoms of a delirium due to some condition such as cerebral arteriosclerosis or an infectious disease, then the

symptoms of the bromide intoxication will be indistinguishable from those of the original illness. Even in such cases, however, the presence of bromide intoxication may be suspected if there is a sudden exacerbation of mental disturbance which is not accounted for by a change in the course of the original somatic disease.

The skin lesions produced by bromide are not specific, but are of some diagnostic importance if a history of the administration of sedatives can be obtained, particularly if the eruption is associated with delirium.

A definite diagnosis of bromide intoxication can be made only by the identification of bromide in toxic quantity in the blood. The test for bromide may readily be carried out in the physician's office. Either whole blood or serum may be used, serum yielding somewhat lower readings. The blood protein is precipitated by trichloroacetic acid, the mixture is filtered and gold chloride added to the clear filtrate. A reddish brown color develops if bromide is present. The mixture is then compared to a standard in a colorimeter or comparometer.* A blood bromide level of 250 mgs.% or higher will account for a delirium in a patient who is in fairly good physical condition. Stated in another way, severe intoxication will usually be produced by a displacement of more than 30% of the blood chloride by bromide. The intoxication is due to the presence of bromide, however, not to the deficiency in chloride.

The treatment of bromide intoxication consists of general supportive measures plus the administration of chloride to eliminate bromide from the tissues. Good nursing care is essential.

Since the patient is usually in a malnourished or dehydrated condition, steps should be taken to insure an adequate intake of food and fluid. A high caloric soft diet rich in vitamins should be given and a minimum of 3000 cc. of fluid a day. Gavage feeding frequently is necessary. Repeated enemas should be given to combat the intestinal sluggishness.

Approximately ten grams of sodium chloride (in capsules) should be given each day in addition to the salt contained in the ordinary diet. Except in emergency, parenteral saline is contraindicated since the rapid elimination of bromide may injure the kidneys.

*Manufactured by The LaMotte Chemical Co., Baltimore, Md.

Chemical sedation is contraindicated and usually ineffective, although drugs are occasionally required to control extreme excitement and noisiness. Continuous tubs and cold wet sheet packs are the best sedative measures available in the management of delirium.

Severe intoxication will usually be controlled by these methods in less than three weeks.

Illustrative Cases:

A 63-year-old widowed housewife had complained for five years of attacks of precordial pain radiating to the left arm, sometimes associated with dyspnea and pulmonary edema. During the past two years these attacks had become more frequent and the patient had become more garrulous, circumstantial and irritable. A diagnosis of general, cerebral and coronary arteriosclerosis was made and a diet low in fluid and chloride ordered. Three months later, after an anginal attack, bromide was prescribed, the patient taking 80 grains a day. After two weeks she became confused, disoriented and hallucinated.

On admission to the psychiatric service the vital signs were normal. She was obviously dehydrated. There was a slight acneform rash on the back. A typical delirium was present, with fluctuation of consciousness. The patient believed she was in a distant city in this country and again that she was in Norway. There were vivid visual and auditory hallucinations: she saw faces in the room, heard her son calling, saw children being murdered. She was extremely frightened and excited. The serum bromide was 300 mgm. %.

She was digitalized, fluids were forced, continuous tubs were used as a sedative, and she was given eight grams of sodium chloride a day in addition to a nutritious unrestricted soft diet. In two weeks the serum bromide fell to 50 mgm. %, the delirium cleared, her general condition improved and she was discharged on a maintenance dose of digitalis.

In this case bromide had been given in an attempt to control anginal pain to an arteriosclerotic patient who was already on a restricted fluid and chloride intake. Severe intoxication quickly developed.

2. A 35-year-old chronically alcoholic married factory worker fell downstairs while intoxicated sustaining a cerebral concussion and losing consciousness for two hours. He had been eating well previously. He was admitted to a surgical service,

where a deviation of the right eyeball and bloody cerebrospinal fluid were found. Within a week the cerebrospinal fluid became clear and the neurologic condition negative. X-ray revealed no fracture. He partially regained consciousness two hours after admission to the hospital but was excited and had to be restrained. Paraldehyde was administered. His delirium did not subside, and a vicious circle was quickly established. For three months the patient was kept in restraint almost continuously while large quantities of paraldehyde, barbiturates, bromide and whiskey were given in an attempt to quiet his delirious excitement. Food and fluids were refused, an inflammatory lesion appeared on the chin and the patient's condition gradually became worse. A consultant advised his transfer to a psychiatric service.

On admission the vital signs were normal. Dehydration was extreme. There was no skin eruption. There was a granulomatous lesion on the chin. The edges of the tongue were smooth and red and the muscles of the thigh and calf were somewhat wasted. The neurologic examination was essentially negative. A typical delirium was present, with fluctuation of consciousness. He thought he was in Sweden and talked much of boats and airplanes. Visual hallucinations were present of a terrifying nature, machines were coming through the window to seize him. Memory was grossly impaired and he confabulated freely. Serum bromide was 300 mgm. %

He was placed on a mattress on the floor. Cold wet sheet packs and continuous tubs were used as sedatives. Fluids were forced by gavage, a high caloric liquid diet was given, plus betaxin, dilute liver extract and nicotinic acid intramuscularly. Ten grams of sodium chloride were administered daily. Antiseptic care was given to the lesion on the chin.

Marked improvement was apparent within 48 hours. After two weeks the serum bromide was 100 mgm. % and the patient was happily attending occupational therapy classes. He was discharged three weeks after admission in normal health.

In this case sedative drugs, chiefly bromide, were used in an attempt to control a posttraumatic delirium. Simultaneously the patient was allowed to become dehydrated and avitaminotic. A vicious circle was established, and after three months the patient's life was in jeopardy. A satisfactory result

was obtained in two weeks by the use of simple supportive and nursing measures plus specific treatment of the bromide intoxication and avitaminosis.

Bromide should rarely be used in medical practice and never without the continuous supervision of a physician. The drug should not be given for more than a few days at a time unless the blood bromide level is controlled. The administration of bromide is clearly indicated only in the treatment of epileptic patients when phenobarbital and dilantin in adequate dosage have failed to control the seizures. The addition of bromide will sometimes then be helpful. Psychologic treatment, not drugs, is indicated in mild tensional conditions and insomnia. If drugs must be used temporarily, barbiturates are more effective than bromide. Bromide has no place in the treatment of depression. Paraldehyde is to be preferred to bromide in the treatment of severe excitement since bromide is ineffective unless dangerously large doses are given. Bromide should be used with caution in cases of arteriosclerosis since delirium is readily produced if cerebral arteriosclerosis is present. Nephritis is a definite contraindication to the use of the drug. Bromide should not be used in cases of dehydration or severe malnutrition in which the body fluids and chlorides are low. Deficient diet and dehydration play a major role in the development of bromide intoxication. Finally, the patient should be warned against the purchase of bromide in a drugstore without a prescription and a prescription for bromide should be marked "not to be refilled."

Summary

1. Bromide intoxication is a serious but preventable condition.
2. Bromide intoxication is manifested by psychiatric or dermatologic symptoms which may occur alone or together. The diagnosis is confirmed by the demonstration of a toxic concentration of bromide in the blood.
3. The tendency of bromide to displace chloride and to accumulate in the tissues is the decisive factor in the production of intoxication.
4. Dehydration and dietary deficiency are important contributing factors.
5. Treatment of the intoxication depends on the administration of adequate amounts of fluids and chloride.
6. Bromide should be used less frequently in medical practice, and only under continuous medical supervision.
7. The sale of bromide without a physician's prescription should be prohibited.



THE RHODE ISLAND MEDICAL JOURNAL

Medical Library Building
106 Francis Street, Providence, R. I.

ALBERT H. MILLER, M.D., *Managing Editor*
28 Everett Avenue, Providence, R. I.

Associate Editors

CHARLES BRADLEY, M.D.	HENRI E. GAUTHIER, M.D.
WILLIAM P. BUFFUM, M.D.	JOHN C. HAM, M.D.
ALEX. M. BURGESS, M.D.	JOHN W. HELFRICH, M.D.
FRANCIS H. CHAFEE, M.D.	ERNEST D. THOMPSON, M.D.
CECIL C. DUSTIN, M.D.	GEORGE L. YOUNG, M.D.

SURGERY IN PATIENTS WITH HEART DISEASE

The accurate pre-operative estimation of how much or how little surgery a given patient with heart disease is likely to survive is obviously of considerable importance to the patient and to all those concerned with his care. This is particularly true in considering surgery which is optional or which may be temporarily delayed if need be. When the nature of the surgical condition is such that operation cannot be delayed, the general condition of the patient must be accepted as it is, whether it be good or bad. Many of the patients with well defined organic heart lesions withstand the strain of anesthesia and operation surprisingly well.

Butler, Feeney, and Levine, in 1930, discussed the question—What added risk does a given heart lesion present to a contemplated operation? Four hundred and fourteen patients with heart disease who underwent four hundred and ninety-four operations were studied. The total mortality was 13 per cent. There were one hundred and forty-seven operations on patients with valvular heart disease with a mortality of 2.1 per cent. One hun-

dred operations on patients with auricular fibrillation carried a 3 per cent mortality. Forty-one operations on patients with coronary thrombosis resulted in a mortality of 44 per cent. Most of these deaths occurred in patients with recent coronary thrombosis. Thirteen operations on patients with syphilitic aortitis resulted in a mortality of 9.1 per cent. Six operations on patients with paroxysmal tachycardia carried no mortality. Fifty operations on patients with congestive heart failure resulted in a mortality of 17 per cent. Four hundred and thirty-three operations on patients with heart disease without nephritis carried a mortality of 4.9 per cent while sixty-one operations on cardiacs with nephritis showed a mortality of 14 per cent.

From the literature and from personal experience there are a few general conclusions which seem to be adequately supported. A skilled anesthetist who can successfully avoid struggling and anoxemia will reduce the strain of operation in cardiac patients to a negligible quantity. Shock lasting more than a few minutes during operation is a very serious occurrence. Uncomplicated hypertension adds very little to the risk of operation. Hypertension complicated by nephritis adds very significantly to the operative mortality. Unexpected death on the operating table is more apt to occur in young people without heart disease than in old people with it. Compensated rheumatic heart disease adds only minimally to the operative risk. Patients having a materially increased operative risk are those with congestive failure, with syphilitic aortitis, with aortic stenosis and with evidence of advanced coronary artery disease. This latter group includes patients with angina pectoris, with complete heart block first appearing late in life, with bundle branch block, or, most important, with recent coronary thrombosis.

As a general rule, with the exception of syphilitic aortic regurgitation, a heart will survive anesthesia and operation if it produces no symptoms in carrying out the demands made upon it in ordinary life. It is generally agreed that spinal anesthesia is inadvisable in patients with significant hypertension. Many qualified commentators agree that skill and care in administration are more important than the choice of the anesthetic in patients with heart disease.

Butler, S., Feeney, N., and Levine, S. A.: The Patient with Heart Disease as a Surgical Risk, J. A. M. A. 98:2, 85 (July 12) 1930.

RHODE ISLAND MEDICAL SOCIETY

Council

The meeting of the Council of the Rhode Island Medical Society was called to order by the President, Dr. Charles H. Holt, at 4:10 P. M., Thursday, September 21, 1939, at the Medical Library. The minutes of the last meeting of the Council were read and approved. Dr. Jesse E. Mowry reported as Treasurer, and it was voted that the resignation of Dr. Elizabeth H. Sumberg be accepted.

It was voted that the following be placed on the retired list:

Dr. Elisha D. Clarke
Dr. Henry J. Hoye
Dr. Florian A. Ruest
Dr. M. J. O'Neil

Dr. G. S. Gordon was dropped for non-payment of dues.

A complaint of Dr. Joseph E. Raia that Dr. Herman Grossman had permitted publicity in the newspapers regarding a case on the Eye Service at the Rhode Island Hospital, was referred to the Grievance Committee.

The resignation of Dr. Frank B. Cutts from the Committee on Education was accepted.

A letter was received from Alice Jaynes Tyler protesting office charges made in the treatment of her son, and the letter was referred to the Secretary for answer because of the lack of jurisdiction of the Council.

Voted that the circular letter Dr. Harry C. Messenger sent to the members of the Providence Medical Association be published in the RHODE ISLAND MEDICAL JOURNAL.

Voted that the award of the Federal Government of \$9,000.00 for serum to be used in pneumonia cases be approved.

Adjourned at 4:45 P. M.

Respectfully submitted,

ROLAND HAMMOND, M.D.,

Secretary pro tem.

House of Delegates

The House of Delegates of the Rhode Island Medical Society was called to order by the President, Dr. Charles H. Holt, at 5:00 P. M., Thursday, September 21, 1939.

Mr. Parker, representing the Blue Network of the National Broadcasting Company, and representing station WEAN in Providence, spoke by invitation, on the subject of blood banks and volunteer donors. He stated that the Blood Donors League was now functioning in several cities throughout the country and requested an opinion from the House of Delegates as to the desirability of such a League in this vicinity. Dr. Jesse P. Eddy, 3rd, in discussion stated that there was a need for voluntary blood donors. It was voted that a Committee of three be appointed to co-operate with Dr. Eddy in the formation of a Blood Donors League in Rhode Island.

The minutes of the previous meeting of the House of Delegates were read and approved and the minutes of the Council of even date were read and approved.

It was voted that the Rhode Island Medical Society endorse the work of the Providence League for the Hard of Hearing, Inc., and the Secretary was instructed to write a letter to the Secretary of the League to that effect.

Voted that Dr. Alex M. Burgess be appointed a Committee of one to confer with Senator Theodore Francis Green, urging him to support a congressional appropriation for the Army Medical Library and Museum in Washington.

The report of the Delegate to the House of Delegates of the American Medical Association was read and placed on file.

Dr. J. P. Deery, by invitation, discussed the question of reporting occupational diseases as required by the Rhode Island law of 1915, and submitted a sample report card, which had been simplified from those previously used. A petition for consideration and action by the House of Delegates of the Rhode Island Medical Society was presented, asking for the approval of the Rhode Island Medical Society, and co-operation with the Department of Health, in carrying out this law.

Voted that the House of Delegates approve the action of the Department of Health in sending out a circular letter to each practitioner in the State requesting co-operation in reporting occupational diseases.

Dr. Francis V. Corrigan, by invitation, discussed the question of giving information regarding private infectious cases in children to the family physician and the public health nurses. The question

was discussed by Drs. Henry Streker and Helfrich, and it was voted to lay the matter on the table until the next meeting and in the meantime the District Societies were requested to discuss this matter at their meetings and report their disposition of this matter to the Secretary of the Rhode Island Medical Society.

Adjourned at 6:10 P. M.

Respectfully submitted,

ROLAND HAMMOND, M.D.,

Secretary pro tem.

Reporting Occupational Disease

(General Laws, 1938, Ch. 255, Sec. 18 to 21.)

Sec. 18. Every physician in this state attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic, brass, wood-alcohol, mercury or their compounds, or from anthrax, or from compressed-air illness, or any other ailment or disease, contracted as a result of the nature of the patient's employment, shall within forty-eight hours of such attendance send to the State Department of Health a report stating:

- (a) Name, address and occupation of patient.
- (b) Name, address and business of employer.
- (c) Nature of disease.
- (d) Such other information as may be reasonably required by the State Department of Health.

The reports herein required shall be on or in conformity with the standard schedule blanks hereinafter provided for. The posting of the report, within the time required, in a stamped envelope addressed to the office of the Director of Health, shall be a compliance with this section.

Sec. 19. The Director of Health shall prepare and furnish, free of cost to the physicians included in Section 18, standard schedule blanks for the reports required under said section. The form and contents of such blanks shall be determined by the Director of Health.

Sec. 20. Reports made under Sections 18 and 19 of this chapter shall not be evidence of the facts therein stated in any action arising out of the disease therein reported.

Sec. 21. It shall furthermore be the duty of the Director of Health to transmit a copy of all such reports of occupational disease to the Chief Factory Inspector.

PETITION

Whereas, The Department of Health of the State of Rhode Island and Providence Plantations, is eager to maintain the good-will and co-operation of the official agencies of the medical profession within the confines of its jurisdiction, and

Whereas, The statutes of this State have demanded, since the year 1915, that every physician report his attendance on a patient suffering an occupational disease, to the Department of Health. It has been observed by this Department that the said law has not been complied with to its full extent, since its enactment. Realizing the value of such reports in carrying on the work of this agency, and especially its Industrial Hygiene program, we hereby

Petition the Rhode Island Medical Society, through its House of Delegates, assembled in regular session, to give sign of their approval and co-operation with the Department of Health, in its efforts to perform this function imposed on it by law.

Respectfully submitted by,

J. P. DEERY, M.D.,

Industrial Hygienist

With the approval of

LESTER A. ROUND, PH.D.

Director of Health.

September 21, 1939.

Action of Rhode Island Division of Child Hygiene

In 1936 the Division of Child Hygiene of the R. I. Department of Health inaugurated a Tuberculin Skin Testing Program in the high schools throughout the State with the understanding that the information from these tests be confidential between the Health Department and the family physician. This program was approved by the State Medical Society at that time.

There are public health nurses acting as family teachers and carrying on a tuberculosis program who would assist in directing families to their private physicians for reports of X-ray findings of positive cases, and we have come to feel that this program would become more effectual if the information might be given to them.

It is therefore suggested that the policy of the Rhode Island Medical Society and the R. I. Department of Health be modified to permit the latter to co-operate with these nursing groups in the

following manner: 1. That the list of names and addresses of all children who have been skin tested, and the results, shall be sent to both the family physicians and the public health nurses. 2. That the reports of all X-ray findings shall also be sent to them.

It is distinctly understood that the tuberculosis nurse shall first contact the family physician and proceed with her case-finding program under his direction, and also that this information be kept confidential by all public health nursing agencies.

It shall be understood that the nurses already carrying the responsibility for tuberculosis nursing in the community shall be responsible for the following up of this information to secure for the community maximum benefit in protection against tuberculosis.

Report of the Trustees of the Fiske Fund

Trustees: Edward S. Brackett, M.D., Charles H. Holt, M.D., Lucius C. Kingman, M.D.

Secretary of the Trustees: Wilfred Pickles, M.D.
June 5, 1939—First Meeting of the Year.

The meeting was held at Dr. Pickles' office and was attended by Drs. Brackett, Holt and Pickles. Several essays were submitted in the current competition on the subject: "Cesarian Section—Indications and Contra-indications for the Various Types of Operation." In the announcement of the contest last year the Trustees stated "They wish to emphasize that, in the present contest, essays should show that the author has performed the various types of operation and speaks from his own experience as well as from a careful review of the literature." The essays submitted were considered with great care, and, while several of them were excellent compilations of current opinion on the subject, and as such were well worthy of publication, none met the requirements as stated above. It was accordingly voted that no award be made.

When Dr. Caleb Fiske established the fund which bears his name, it was his expressed desire to stimulate original observation of disease by the members of the Rhode Island Medical Society. The Trustees are endeavoring to carry out that wish and are much concerned that for several years it has been impossible to award a prize. They accordingly voted that a prize of two hundred and fifty dollars be offered for an original essay to be sub-

mitted before May 1, 1940, on the subject, "Fracture of the Femur—Methods of Treatment and End Results—as Based on Personal Observation or Hospital Records." It is their hope that this contest will be productive of many dissertations and that they will be able to make an award.

It was voted that the emolument of the Trustees be given to the Medical Library for the catalogue fund.

The Secretary was directed to pay for the care of Dr. Fiske's grave, as in past years.

The usual financial report was submitted and was accepted by the Trustees.

Respectfully submitted,

WILFRED PICKLES, M.D., *Secretary*

Report of the Delegate to the American Medical Association

The convention of the American Medical Association was held in St. Louis, May 15-19, 1939. The St. Louis County Medical Association deserves a great deal of credit for the efficient manner in which the convention was conducted and also for hospitality.

The members of the House of Delegates were given a dinner the first evening of the convention and that was followed by a puppet show. Certain easily recognized characters, Dr. Sharkbein and Dr. Going West, were sentenced to long terms in the doghouse by the testimony of an economic royalist, P. Fuller Bloat; a labor racketeer, Michael Skullbuster; a cult promoter, Dr. DeJerker and several others of like character. Doctors Sharkbein and Going West were finally rescued by Aesculapius.

The scientific division of the convention, including the exhibition and scientific papers, was of the same caliber of former years. Each year one notes a closer relation between papers and exhibits. One often heard expressed a desire for a day or two more of time, a matter which could well receive further consideration.

The transactions of the House of Delegates have been reported in detail in the *Journal of the American Medical Association* for the weeks of May 27 and June 3, 1939. They are very instructive and well worth your careful attention. Here, only parts may be quoted.

After reviewing the past year of the controversy between the Government and the American Medical Association, Dr. Irvin Abell said "The fundamental point at issue in the indictment of the American Medical Association is as to where the power of policing professional organizations shall lie. Heretofore by common consent this power has been vested in the organizations themselves, which have established standards of qualification, training, attainment, character and conduct for those desiring to enter their ranks and for the members desiring to remain in their ranks. This power has been exercised in good faith and with good intent for the protection of the public. Should a conviction be obtained and upheld by the appellate courts, the policing power would be transferred to the federal government, which would then determine qualifications for membership, articles of expulsion, and the like. While this legislation was primarily aimed at the American Medical Association, it is apparent that many other organizations, professional and business, have an interest in it, since that which applies to one will apply to all."

Dr. Rock Sleyster, President-elect, urged members to take a more personal view of the American Medical Association, stating that 535 North Dearborn Street is not the Association but a building. We, the members, individuals, are the Association and indictment of the Association is an indictment of ourselves.

Dr. Sleyster also cautioned members against expressing private opinions that may be mistaken for those of the profession as a whole.

For the past few years, the social and economic aspects of medical practice have been the chief concern of organized medicine and this year has been no exception. Several State societies have passed resolutions opposing the Wagner Act. Some of these were presented to the House of Delegates of the American Medical Association.

A committee composed of Doctors Walter F. Donaldson, Frederic E. Sondern, Walter E. Vest, Fred W. Rankin, E. H. Cary, Henry A. Luce, and Howard L. Snyder was appointed to consider the Wagner National Health Bill. Their report in the June 3, 1939, issue of the *Journal of the American Medical Association*, page 2295, should be read by everyone and I strongly urge you to do so for I believe it to be one of the most important pronouncements made by the American Medical Association.

The Committee sat for hearings both during days and long hours of the nights. The conclusions were not hastily drawn. Obviously, I can give you but a few:

1. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

2. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

3. This bill proposes to make federal aid for medical care the rule rather than the exception.

4. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

5. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

6. The Wagner Health Bill provides for supreme federal control; federal agents are given authority to disapprove plans proposed by the individual states.

The report of the Committee on Medical Care is also one that should receive your earnest consideration. It is printed in the *Journal of the American Medical Association*, in the issue of May 27, 1939, page 2177, and signed by Dr. William F. Braasch of the Mayo Clinic. A brief quotation here is interesting: "Fully 90 per cent of all the sources consulted reported that they knew of no significant number of persons needing and seeking medical care who were unable to obtain it. Nurses, health departments, relief and welfare workers, school and university authorities, industrial and mutual organizations and pharmacists were all asked how many, if any, persons of whom they had knowledge had been unable to obtain needed medical care. . . . The overwhelming majority of opinions from all sources agree that forty thousand and not forty million persons in the United States are denied needed medical service."

The House adopted a resolution asking Congress to provide funds for the Army Medical Library and Museum.

A resolution recommending that films of a medical nature for the laity be approved by state or county medical societies was adopted.

The Distinguished Service Award was given Dr. James B. Herrick of Chicago for his contributions to the knowledge of coronary occlusion.

Dr. Olin West reported the membership of the Association to be 113,113; the Fellowship, 70,100, both substantial increases.

The following were elected to office: President, Rock Sleyster, M.D.; President-elect, N. B. Van Etten, M.D.; Treasurer, H. L. Kretschmer, M.D.; Speaker of the House, H. H. Shoulder, M.D.; Vice-Speaker, R. W. Fouts, M.D.; Trustees, Roger Lee, M.D., and E. L. Henderson, M.D.

The next convention will be held in New York City June 10-14, 1940.

Respectfully submitted,

GUY W. WELLS, M.D.

RHODE ISLAND HOSPITAL

Dr. William O. Rice, efficient superintendent of the Rhode Island Hospital for the past five years, has resigned his position, the resignation effective on January 1, 1940. Dr. Dennett L. Richardson, present superintendent of the Charles V. Chapin Hospital, will succeed Dr. Rice at the Rhode Island Hospital.

On June 19, Dr. G. Edward Crane and Miss Lillian Peterson were married. Dr. and Mrs. Crane are residing at 129 Nelson St., City.

On Sept. 15, Dr. Thomas Dring of Newport, R. I., began a two-year internship. Dr. Dring is a graduate of Rhode Island State College and Cornell Medical School.

On August 15, Dr. Heber Johnson began a two-year internship. Dr. Johnson's home is in Ironton, Ohio. He graduated from Ohio University in Athens, Ohio, and Harvard Medical School.

On Oct. 1, after two years internship, Dr. Robert Chace left for his home on Wayland Ave. On January 1, 1940, he expects to take an internship in Presbyterian Hospital, New York City, doing eye work.

Dr. Palmer Congdon, who became Resident House Physician on July 1, resigned from that position in September in order to take up work in Alaska. He is to be a Tuberculosis Clinician, and will travel throughout the territory lecturing and holding clinics. Dr. Congdon will be a member of the Staff of the Territorial Department of Health. The Commissioner of Health is a Doctor Council. Dr. Congdon will be on his Staff with headquarters at Juneau. He sailed from Seattle, Washington, October 7, on the S. S. Alaska for Juneau.

RECENT BOOKS

PRINCIPLES OF CHEMISTRY, AN INTRODUCTORY TEXTBOOK OF INORGANIC, ORGANIC, AND PHYSIOLOGICAL CHEMISTRY FOR NURSES AND STUDENTS OF HOME ECONOMICS AND APPLIED CHEMISTRY, WITH LABORATORY EXPERIMENTS. By Joseph H. Roe, Ph.D. Fifth Edition, pp. 503, with 53 illustrations in the text and 5 plates. Cloth, \$3.00. The C. V. Mosby Company, St. Louis, 1939.

The new fifth edition of this textbook differs from former editions in several respects. One change which should enable nursing schools to follow easier the recommendations of the new curriculum as outlined by the National League of Nursing Education is the addition of material on organic chemistry. The survey of organic chemistry seems to be a good one from the viewpoint of the chemistry teacher in the nursing school.

Applications to clinical conditions and to nursing are stressed throughout the text and the portion given over to physiological chemistry is especially well applied to pathological conditions in medicine.

It is the opinion of the reviewer that the text will be applicable in nursing schools where a good foundation of general chemistry is a requirement for entrance. In those schools which give the first chemistry that the student receives, the text would be difficult, or if used, the students would require considerable help in order to understand it.

The reviewer also questions the advisability of giving so much space to the listing of materials for laboratory experiments and to a description of the experiment. It often seems best to work out the experiments according to the instructors' own ideas and including materials that can be supplied in that particular school for laboratory equipment.

The reviewer feels that the questions and fill-in forms which have been added in this addition are well chosen and would be very helpful.

MARY G. SANDERS, B.A., R.N.

OUTLINE OF ROENTGEN DIAGNOSIS by Leo G. Rigler, M.D. 212 Pages. Additional "Pictorial Atlas" with 254 illustrations. Philadelphia. J. B. Lippincott Co. Regular Edition \$6.50. Special student's edition, without atlas, \$3.00.

As the sub-title states, this book is an "orientation in the basic principles of diagnosis by the Roentgen method." The author, who is professor of Roentgenology at the University of Minnesota, has expanded and revised an originally simple set of notes which had been used for many years as a foundation in his didactic lectures on X-ray diagnosis to undergraduate medical students. The resulting volume, while not in any way a true reference work in roentgenology, is certainly a splendid outline of the important features of the application of X-rays to the diagnosis of disease.

The opening section covers the general principles of roentgen diagnosis. The nature and value of the method are outlined. The author emphasizes that the method is not to be considered as an exclusive diagnostic procedure,

but merely as a part of the examination of every patient. In many instances, of course, it may be the part of utmost importance.

The remaining sections deal respectively with bones and joints, diseases of the spine and spinal cord, the skull and its contents, the thorax, the digestive tract, gallbladder, miscellaneous abdominal pathology, the urinary tract, female generative organs, and miscellaneous diagnostic fields.

In all these sections there are concise outlines of the X-ray signs shown in the various diseases, together with excellent tables of differential diagnosis. Throughout these chapters there are paragraphs in which is presented as definitely as possible the relative value and the limitations of the X-ray diagnosis of each particular disease.

While primarily the book is intended as a foundation for the teaching of roentgenology to undergraduate medical students, it is also very useful as an initial textbook for physicians intending to enter the special field of roentgenology. The keen clinical knowledge and critical judgment of the author are reflected throughout, and offer a constant check to acquiring a distorted or one-sided point-of-view concerning the application of the X-ray method to any particular diagnostic problem. Even to experienced roentgenologists this book may be of value in furnishing concise, accurate and complete outlines of diagnostic data.

The regular edition has an atlas of illustrations in the back of the book, with reproductions of selected, characteristic roentgenograms, line drawings and valuable diagrams. A special student's edition is also available without the atlas, at a substantial reduction in price.

ISAAC GERBER, M.D.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,
REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912,
AND MARCH 3, 1933

of *Rhode Island Medical Journal*, published monthly at Providence,
Rhode Island, for October, 1939.
State of Rhode Island } ss.
County of Providence }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Albert H. Miller, M.D., who, having been duly sworn according to law, deposes and says that he is the Managing Editor of the *Rhode Island Medical Journal*, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Rhode Island Medical Society, 106 Francis Street; Managing Editor, Albert H. Miller, M.D., 106 Francis Street.
2. That the owner is: Rhode Island Medical Society, 106 Francis Street.
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; and also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation, has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

ALBERT H. MILLER, M.D.

Sworn to and subscribed before me this 27th day of September, 1939.

[SEAL.]

JOHN E. FARRELL, Notary Public.
(My commission expires June 30, 1941.)